UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,880	12/31/2003	Yuvaraj Athur Raghuvir	11884/405701	8889

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/749,880	RAGHUVIR ET AL.
	Examiner	Art Unit
	TED T. VO	2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 February 2008*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,3-6,8-10,16 and 17* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1,3-6,8-10,16 and 17* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the amendment filed on 02/28/2008.

Claims 1, 3-6, 8-10, 16-17 are pending in the application.

Response to Arguments

2.   Regarding the arguments to the rejection of Claim 16 under 102 and Claims 1, 3-6, 8-10

under 103 in the Remarks on 02/28/2008:

The arguments solely contend that the Skinner test class is associated with a development

class. Examiner's response: Skinner includes testcase classes with an API framework. See sec.

6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72, support Java Library included with defined API and

event notifications used for accessing and keep tracking of operation nesting, such as the

operation of a testcase of Fig. 5.1.

With regard to the argument that Elbaum that does not cure the definition of Skinner

reference. See the prior examiner response to this argument.

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Claim Rejections - 35 USC § 102

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3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

>   A person shall be entitled to a patent unless –
>
>   (b) the invention was patented or described in a printed publication in this or a foreign
>   country or in public use or on sale in this country, more than one year prior to the date of
>   application for patent in the United States.

4.   Claims 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Skinner,

"Enhancing an Open Source UML Editor by Context-Based Constraints for Components",

Technical University of Berlin, pp. 1-121, 12-2001.

As per Claim 16: Skinner discloses,

A computer system for testing a software application comprising:

a test module (all UML diagrams are implemented by at least one software module: Skinner

shows the test is organized in hierarchical scenario: Figure 5.1, p. 28);

at least one nested test case class defined for each of a plurality of operations, wherein the

operation is characterized as having a beginning and an end (Figure 5.1, p. 28, represents

having nested test case class defined for each of a plurality of operations, where the test

hierarchical structure has a beginning as root and an end as an ended object model. Also see sec.

6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72, support Java Library included with defined API and

event notifications used for accessing and keep tracking of operation nesting, such as the

operation of a testcase of Fig. 5.1 change)*; wherein each operation includes a collaborative*

behavior of a plurality of classes (Figure 5.1, and p. 75: Sec. 10.4, comparing these to the

specification describing JUnit test);

a first portion for receiving first information describing valid start states and probable end

states for each test case class (See p. 77, validate the XMI document..., see CrCoConlnvalid, p.

112, etc), *the valid start states and portable end states to be defined by an application program*

interface (API) framework (See sec. 6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72);

a second portion for receiving second information for relating at least a portion of the test case

classes to reflect a particular hierarchically organized scenario for testing (e.g. the

implementation for UML Diagram seen in Figure 5.1 p. 28)*; and*

a third portion for performing a test of the particular hierarchically organized scenario as a

function of the first information and second information to determine if the scenario is

semantically correct with respect to the API framework (e.g. the execution of a test based on the

scenario as of UML diagrams, and See sec. 6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72 in

accordance to this reference).

As per Claim 17: The Claim recite a method that has the claimed limitations corresponding to the

limitations recited in Claim 16: See the rationale addressed in the rejection of claim 16 above.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
> by the manner in which the invention was made.

6.   Claims 1, 3-5, 6, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Skinner, "Enhancing an Open Source UML Editor by Context-Based Constraints for

Components", Technical University of Berlin, pp. 1-121, 12-2001, in view of Elbaum, "Test

Case Prioritization: A Family of Empirical Studies", IEEE, pp. 159-182, 2-2002

As per Claim 1: Skinner discloses a method for testing software by using an UML editor/JUnit to

build a test scenario for software testing (See Figure 5.1, p. 28). The UML editor/Junit provides

the test that receives test case class with a plurality of operation such as TestA(), TestB().

Associated with the test case is Testsuite, test interface, TestRunner (Figure 5.1) ('*test*

scenario'). In the test framework built under UML diagram as shown in Figure 5.1, it has the

hierarchically organized test scenario, and nested test case class properties.

Skinner discloses, *A computer-implemented method for testing a software application*

comprising:

  associating a test case class with each of a plurality of operations (See Figure 5.1, p. 28,

TestCase, AtestCase, Test(A), etc., See p. 74, sec. 10.4, comparing these to the specification

describing JUnit test), *wherein each operation includes a collaborative behavior of a plurality*

of classes and wherein and wherein the test case class is defined by an application program

interface (API) framework, the API framework including a test case framework that defines

valid start states and probable end states for the test case class (Figure 5.1, p. 28, represents

having nested test case class defined for each of a plurality of operations, where the test

hierarchical structure has a beginning as root and an end as an ended object model. Also see sec.

6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72, support Java Library included with defined API and

event notifications used for accessing and keep tracking of operation nesting, such as the

operation of a testcase of Fig. 5.1 change)*;*

  receiving a hierarchically organized test scenario, the test scenario including at least

one selected, nested test case class (The UML diagram of test framework: i.e., the diagram in

Figure 5.1, or see Figure 2.2, p. 17)*;*

  receiving ranking information for the test scenario (See description of Unit Testing, p.

27, discussing which test should do first), *the ranking information pertaining to relative*

prioritization of execution of each of the selected test case classes (abstractly described in p.

27)*;*

performing a test of the test scenario as a function of the ranking information (Figure 5.1 in p.

28 is an example of a test case that is run using the hierarchically organized test scenario, where

the test case used in this test run is performed in the manner to the priority discussion in p. 27), ***to***

determine if the test scenario is semantically correct with respect to the API framework (See

sec. 6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72)

The performance of a test in the Skinner reference is provided by a selection of test run

such as Figure 5.1, and is based on Constraints in UML. Skinner defines priority of test based a

top priority of fixed code, i.e. test suite of 99% tests pass is still a failure (See p. 27); there are

constraints in XMI-element definition included with "priority" (p. 74), where XMI-elements is

known as related to UML diagrams that is used as *hierarchically organized test scenario* as

shown in Figure 5.1.

The reference Skinner discussed receiving ranking information relatively of each test

case class in the execution with a generic manner (as discussed as "top priority" based on the

99% of testcase failures and "constraints" shown in the XML-elements). It does not explicitly

use the language as recited in the claim, *"the ranking information pertaining to relative*

prioritization of execution of each of the selected test case classes"

Elbaum establishes prioritization in testcases. Its purpose is to provide ranking

information for testcases (Elbaum: sec. 3, start at p. 160), for a test scenario. The ranking

information pertains to relative prioritization of execution of each of the selected test case (See p.

169-170, discussing rankings for the Experiments 1a (p.167) and 1b (p.169) so that the

performance of the test is as a function ('function level') of the ranking information.

Since using UML diagrams is for conforming to an open source which is developed by OMG in model management, and since prioritization of test cases is well-known subject in testing for assisting software test engineers to improve test performance as increasing the test suite's rate of fault detection, the two elements (test scenario using UML diagrams and test case prioritization) are well-known to all skills in the arts. They use the UML diagrams for relating test model and establish the prioritization as a nature of need and availability.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the well-known "prioritization" of test cases, by Elbaum, and object management model developed by OMG and disclosed by Skinner in a hierarchically organized test scenario. The inclusion is obvious because it yields predictable results for any ordinary skill in the art.

As per Claim 3: Regarding limitation,

The method according to claim 1, wherein the ranking information is validated to be semantically correct with respect to the API framework. As suggested in Skinner, sec. 6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72 for testing related API, it is obvious to include ranking of Elbaum, because semantic validation is a part of programming, and where ranking information is as part of the code (Elbaum: p.159, introduction, see sec. 5.3, start at p. 171).

As per Claim 4: Regarding limitation, *The method according to claim 3, wherein the ranking information is validated to be semantically correct by defining valid start states and probable end states for each associated operation* (As suggested in Skinner, sec. 6.7, p. 37, sec. 6.8, p. 38,

and see p. 71-72, for start states and end states for each associated operation, Elbaum: p.159,

introduction, see sec. 5.3, start at p. 171. Skinner: p. 17, p. 18).

As per Claim 5: Regarding limitation, *The method according to claim 3, wherein the ranking*

information is validated to be semantically correct with respect to the API framework by

providing an editor that allows only valid nesting of test cases (Elbaum: p.159, introduction, see

sec. 5.3, start at p. 171. Skinner: p. 17, p. 18, especially, the UML diagrams is associated with an

editor (Figure 7.2, p. 43), and sec. 6.7, p. 37, sec. 6.8, p. 38, and see p. 71-72 for nested testing

related to API). It obvious to include because it is known that UML diagram is a nested

structure, and it should be noted that validation is part of programming language.

As per Claims 6, 8-10: The Claims recite a computer system that has the claimed limitations

corresponding to the limitations recited in Claims 1, 3-5: See the rationale addressed in the

rejection of claims 1, 3-5 above.

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from

the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the

mailing date of this final action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory

period for reply expire later than SIX MONTHS from the mailing date of this final action.

      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The

examiner can normally be reached on 8:00AM to 5:30PM.

      If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wei Y. Zhen can be reached on (571) 272-3708.

The facsimile number for the organization where this application or proceeding is assigned is the

Central Facsimile number 571-273-8300.

      Any inquiry of a general nature or relating to the status of this application should be

directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of

an application may be obtained from the Patent Application Information Retrieval (PAIR)

system. Status information for published applications may be obtained from either Private PAIR

or Public PAIR. Status information for unpublished applications is available through Private

PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

TTV
June 19, 2008

/Ted T. Vo/
Primary Examiner, Art Unit 2191